Frequently Asked Questions about Bristol Bay 404c Process

Related Information

- Frequently asked questions about Bristol Bay Assessment

Q: Why is EPA Region 10 proposing action to protect Bristol Bay?
A: EPA Region 10 is proposing this action because the Clean Water Act requires the agency to protect the nation's waters, including the protection of fisheries. The Bristol Bay watershed is an area of exceptional ecological value with salmon fisheries unrivaled anywhere in North America. Development of a mine at the Pebble deposit would result in one of the largest open pit copper mines in the world and would threaten this valuable resource.

Simply put, this will be a uniquely large mine in a uniquely important place.

The region's streams, wetlands, lakes and ponds provide intact habitat that support all five species of Pacific salmon found in North America: coho, Chinook, sockeye, chum, and pink. The salmon populations are critical to the health of the entire ecosystem, which is home to more than 20 fish species, 190 bird species, and more than 40 terrestrial mammal species, including bears, moose, and caribou.

Bristol Bay supports commercial, subsistence, and recreational fisheries that are worth hundreds of millions in economic yield each year and create thousands of jobs. Bristol Bay's fishery resources have supported a subsistence-based way of life for Alaska Natives for over 4,000 years.

After careful consideration of available science in the recently completed multi-year Bristol Bay Watershed Assessment and other available information, including extensive materials provided by the Pebble Limited Partnership, EPA Region 10 decided to proceed under its Clean Water Act Section 404(c) regulations to protect Bristol Bay resources from the adverse environmental effects of mining the Pebble deposit in southwest Alaska.

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Q: What does the science say about Bristol Bay?
A: In January 2014, EPA Region 10 completed an independently-peer reviewed, multi-year Bristol Bay Watershed Assessment. This science report looked at not only the importance of the Bristol Bay watershed, but also analyzed the impacts of mining the pebble deposit. It found that the Bristol Bay watershed was pivotal and unique. Key findings on Bristol Bay's productivity include:

- Bristol Bay supports the largest sockeye salmon run in the world, producing approximately 46 percent of the world's wild sockeye.
- The Bristol Bay region is home to 31 Alaska Native Villages. Residents of the area depend on salmon both as a major food resource and for their economic livelihood. Nearly all residents participate in subsistence fishing.
- The annual average run of sockeye in Bristol Bay was approximately 37.5 million fish between 1990 and 2010. In 2009, Bristol Bay's wild salmon ecosystem generated $480 million in economic activity and provided employment for over 14,000 full and part-time workers.
- All five species of Pacific salmon spawn and rear in the Bristol Bay watershed: coho, Chinook, sockeye, chum and pink. In addition, the Nushagak River supports one of the world's largest Chinook salmon runs.
- The Bristol Bay watershed provides habitat for 29 fish species, more than 190 bird species, and more than 40 terrestrial animals.
- Bristol Bay supports large carnivores such as brown bears, bald eagles, and wolves that depend on salmon; ungulates such as moose and caribou; and numerous waterfowl species. The salmon in the watershed provide essential nutrients that support the ecosystem.

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Q: How could mining the Pebble Deposit affect the Bristol Bay salmon fishery?
A: Northern Dynasty Minerals is the sole owner of the Pebble Limited Partnership and controls the mining claims surrounding the Pebble deposit. Based on information provided by Northern Dynasty Minerals to investors and the U.S. Securities and Exchange Commission, mining the Pebble deposit is likely to result in:

- **A mine pit nearly as deep as the Grand Canyon.** EPA estimates the mine would require excavation of the largest open pit ever constructed in North America and would cover nearly 7 square miles at a maximum depth of over 3/4 of a mile. The maximum depth of the Grand Canyon is about one mile.
- **Mine waste that would fill a major football stadium up to 3,900 times**. This includes mine tailings and waste rock.
- **Massive mine waste impoundments that would cover approximately an additional 19 square miles** and waste rock piles covering nearly 9 square miles in an area with productive streams and wetlands, lakes and ponds important for salmon.
- **A mining operation that would cover an area larger than Manhattan.** This includes all three mine components EPA considered (mine pit, tailings impoundments, and waste rock piles).

A mine would require additional infrastructure including a major transportation corridor, pipelines, and wastewater treatment plants. EPA Region 10 has prepared a conservative analysis of the footprint impacts of the proposed mine. It is based on a scenario much smaller than the mine proposed in the SEC filings from Northern Dynasty Minerals and does not include the impacts from the transportation corridor, pipelines, a large power plant or wastewater treatment facilities.

The unacceptable adverse effects identified by EPA Region 10 in the Proposed Determination are based on the construction and operation of a 0.25-billion-ton mine. This was the smallest of the three mine scenarios EPA analyzed and significantly smaller than the mines articulated to Northern Dynasty Minerals investors. The Pebble 0.25 mine scenario has been analyzed by EPA Region 10 based on peer review comments that EPA should evaluate the impacts from a mine equaling the median size porphyry copper mine worldwide, even though it is far smaller than the mine scenarios put forward to investors and the SEC by Northern Dynasty Minerals.

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Q: What does your proposed determination recommend?
A: EPA Region 10's proposal to protect the Bristol Bay watershed outlines restrictions that would protect waters that support salmon in and near the Pebble deposit area. The restrictions of this proposal are for impacts associated with mining the Pebble deposit and will not affect other mining operations.

EPA Region 10 has initially concluded that mining the Pebble deposit would affect the South Fork Koktuli River, North Fork Koktuli River and Upper Talarik Creek watersheds. The proposed restrictions are outlined in a document called the Proposed Determination. The restrictions are based on the construction and operation of a 0.25-billion-ton mine. This was the smallest of the three mine scenarios EPA analyzed and significantly smaller than the mines articulated to Northern Dynasty Minerals investors.

EPA Region 10 proposes to restrict all discharge of dredged or fill material related to mining claims on the Pebble deposit that are owned and controlled by the Pebble Limited Partnership and Northern Dynasty Minerals and its subsidiaries. EPA Region 10 has found that the development of a 0.25-billion-ton mine or larger would create the following unacceptable adverse effects on fishery areas in the Bristol Bay watershed:

- **Loss of Streams:** The loss of five or more miles of streams with documented salmon occurrence (coho, Chinook, sockeye, chum, pink); or the loss of 19 or more miles of streams where salmon are not documented, but that are tributaries of streams with documented salmon occurrence
- **Loss of Wetlands, Lakes, and Ponds:** The loss of 1,100 or more acres of wetlands, lakes, and ponds that connect with streams with documented salmon occurrence or tributaries of those streams
- **Streamflow Alterations:** Streamflow alterations greater than 20 percent of daily flow in nine or more linear miles of streams with documented salmon occurrence

According to EPA records, losses of the nature and magnitude listed above would be unprecedented for the Clean Water Act Section 404 regulatory program in the Bristol Bay region, as well as the rest of Alaska and perhaps the nation.

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Q: How often has EPA used this authority? Is it common?
A: The Clean Water Act generally requires a Section 404 permit from the U.S. Army Corps of Engineers before any person places dredged or fill material into streams, wetlands, lakes and ponds. The U.S. Army Corps of Engineers authorizes thousands of permits every year, and EPA works with the Corps and developers to resolve environmental concerns so projects can move forward. Under Section 404(c), EPA is authorized to prohibit or restrict fill activities if a project would have unacceptable adverse effects on fishery areas.

EPA has used its 404(c) authority sparingly, beginning the process in 30 instances and completing it only 13 times in the 42-year history of the Clean Water Act. EPA use of the authority has typically involved major projects with significant impacts on some of America's most ecologically valuable waters. EPA has used this authority to protect a valuable trout fishery in Colorado, commercial and recreational fish habitat in Virginia, sensitive areas of the Florida Everglades, and coastal wetlands in Louisiana that provide habitat for fish and wildlife.

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Q: What is Section 404 of the Clean Water Act?
A: The Clean Water Act generally requires a permit under Section 404 from the U.S. Army Corps of Engineers before any person places dredge or fill material into wetlands, lakes and streams. Mining operations typically involve such activities and must obtain Clean Water Act Section 404 permits. Section 404 directs EPA to develop the environmental criteria the Army Corps uses to make permit decisions. It also authorizes EPA to prohibit or restrict fill activities if EPA determines such actions would have unacceptable adverse effects on fishery areas, shellfish beds, water supplies, wildlife, or recreational areas.

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Q: What is EPA's review process under Section 404(C)?
A: The Multi-Step 404(c) Review Process is as follows:

- Step 1 – Consultation period with U.S. Army Corps of Engineers and owners of the site.
- Step 2 – Publication of Proposed Determination, including proposed prohibitions or restrictions on mining the Pebble deposit, in the Federal Register for public comment and one or more public hearings.
- Step 3 – Review of public comments and development of Recommended Determination by EPA Regional Administrator to Assistant Administrator for Water at EPA Headquarters in Washington, DC.

- Step 4 – Second consultation period with the Army Corps and site owners and development of Final Determination by Assistant Administrator for Water, including any final prohibitions or restrictions on mining the Pebble deposit.

We are in step two of this process. The entire process typically takes about a year to complete.